Drinking Water Surveillance Program

OSHAWA WATER SUPPLY SYSTEM

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OSHAWA
WATER SUPPLY SYSTEM

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1988

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

OSHAWA WATER TREATMENT PLANT
1988 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The Oshawa Water Treatment Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, disinfection and fluoridation. This plant has a design capacity of 136 x 1000 m^3/day and serves a population of approximately 244,000.

Water samples from the raw, treated and two distribution sites were taken on a monthly basis and analyzed for approximately 160 parameters during 1988. Parameters were divided into the following groups Bacteriological, Inorganic and Physical(Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Chlorophenols, Pesticide and PCB, Phenolics, Polynuclear Aromatic Hydrocarbons, Specific Pesticides and Volatiles). Specific Pesticides and Chlorophenols were analysed for in June and November only.

A summary of results is shown in Table 1.

The ODWO for turbidity (1 FTU) was exceeded in the January treated water sample. The District Officer was notified. All other Inorganic and Physical parameters (Laboratory Chemistry, Field Chemistry and Metals) were below any applicable health related ODWOs.

Of approximately 110 Organic parameters tested for on a monthly basis, none exceeded health related guidelines.

During 1988 the DWSP sampling results indicated that the Oshawa Water Treatment Plant produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE BY SCAN

SCAN	RAW			TREATED			SITE 1			SITE 2		
	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE
BACTERIOLOGICAL	42	39	92	48	10	20	35	9	25	36	6	16
CHEMISTRY (FLD)	36	36	100	72	72	100	120	120	100	115	115	100
CHEMISTRY (LAB)	246	207	84	246	179	72	360	315	87	360	293	81
METALS	287	154	53	287	151	52	469	284	60	469	270	57
CHLOROAROMATICS	154	0	0	168	0	0	140	0	0	140	0	0
CHLOROPHENOLS	12	0	0	12	0	0	.	.	.	.	.	.
PAH	204	0	0	204	0	0	.	.	.	.	.	.
PESTICIDES & PCB	375	0	0	396	0	0	330	0	0	330	0	0
PHENOLICS	12	3	25	12	2	16	.	.	.	.	.	.
SPECIFIC PESTICIDES	56	0	0	56	0	0	0	0	0	0	0	0
VOLATILES	316	5	1	316	44	13	259	37	14	259	36	13
TOTAL	1740	444		1817	458		1713	765		1709	720	

NO HEALTH RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

OSHAWA WATER TREATMENT PLANT
1988 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The DWSP program was initiated at the Oshawa Water Treatment Plant in February 1987. An annual report was published for 1987 (ISBN 0840-5263).

This report contains information and results for 1988.

PLANT DESCRIPTION

The Oshawa Water Treatment Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, disinfection and fluoridation. This plant has a design capacity of 136 x 1000 m^3/day and flows on day of sampling ranging from 50.1 x 1000 m^3/day to 81.2 x 1000 m^3/day. It serves a population of approximately 244,000.

The plant location is shown in Figure 1. Plant Process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

METHODS

Water samples were obtained from four DWSP approved locations;

i) Plant Raw - The water originated from the wet well prior to chlorination and was sampled through a stainless steel line and pump. The sample tap is located in the plant laboratory.

ii) Plant Treated - The water originated from the highlift discharge after addition of all treatment chemicals and was sampled through a stainless steel line. The sample tap is located in the plant laboratory.

iii) Distribution System - Site 1 - The distance of this house from the plant is unavailable. Water was sampled through copper plumbing from the basement laundry tap.

iv) Distribution System - Site 2 - The distance of this house from the plant is unavailable. Water was sampled through copper plumbing from the basement laundry tap.

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

OSHAWA WATER TREATMENT PLANT

Figure 2

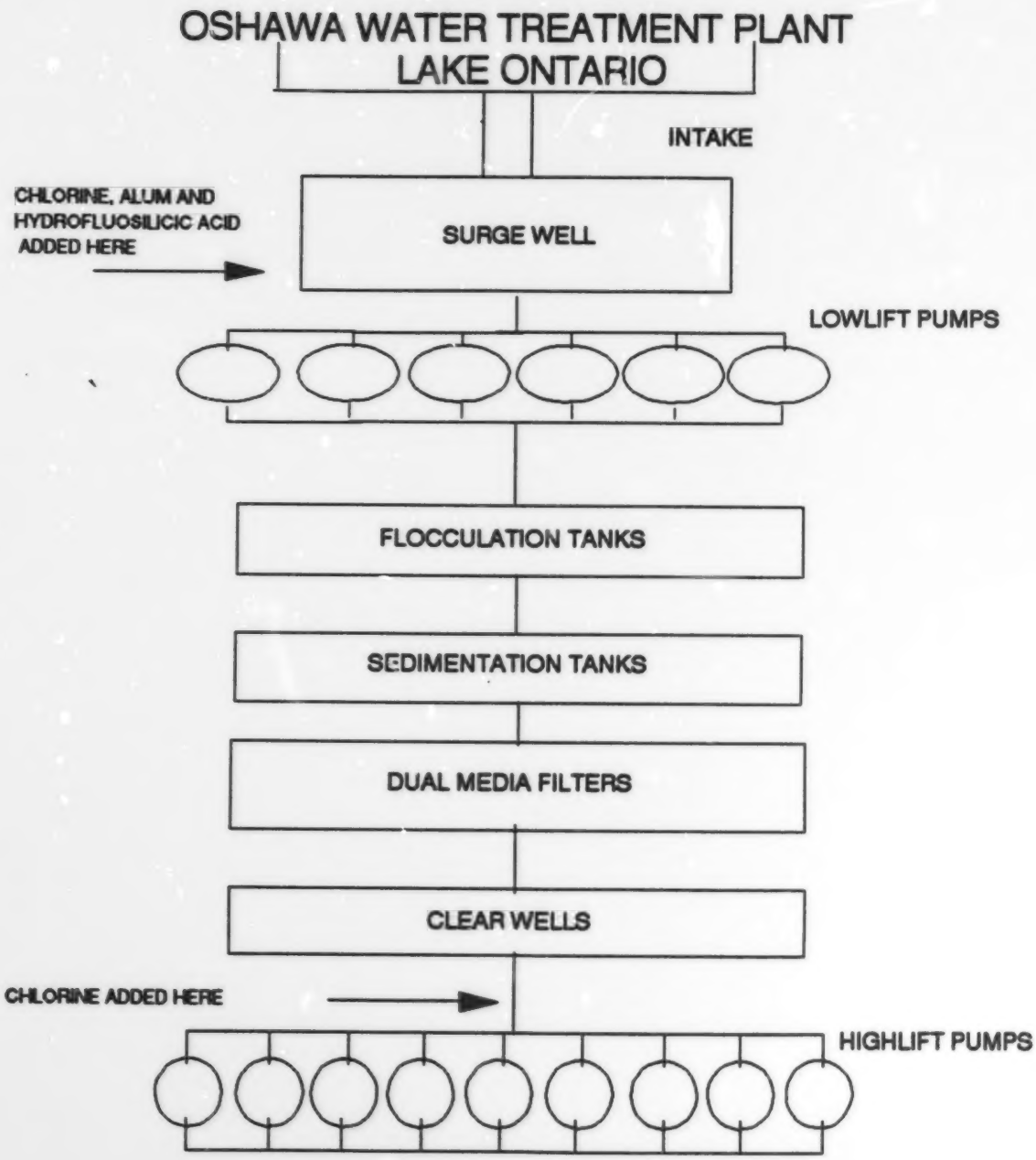
OSHAWA WATER TREATMENT PLANT
LAKE ONTARIO
INTAKE
CHLORINE, ALUM AND HYDROFLUOSILICIC ACID ADDED HERE
SURGE WELL
LOWLIFT PUMPS
FLOCCULATION TANKS
SEDIMENTATION TANKS
DUAL MEDIA FILTERS
CLEAR WELLS
CHLORINE ADDED HERE
HIGHLIFT PUMPS

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

OSHAWA WATER SUPPLY SYSTEM

LOCATION:	1540 RITSON RD SOUTH OSHAWA, ONTARIO L1J 6E5 (416-723-7233)
SOURCE:	RAW WATER SOURCE - LAKE ONTARIO
RATED CAPACITY:	100 (1000 M^3/DAY)
OPERATION:	REGIONAL MUNICIPALITY OF DURHAM
PLANT SUPERINTENDENT:	
MINISTRY REGION:	CENTRAL
DISTRICT OFFICER:	R. BOYD

MUNICIPALITY SERVED	POPULATION
OSHAWA	121,100
WHITBY	43,275
AJAX	34,930
PICKERING	43,480

At both distribution system locations two types of samples were obtained: a standing and a free flow. The standing sample consisted of water that had been in the household plumbing and service connection for a minimum of six hours. These samples are used to make an assessment of the amount by which the levels inorganic compounds and metals may be changed on standing due to leaching from (or deposition on) the plumbing system. The only analyses carried on the standing samples therefore, are General Chemistry and Metals. The free flow sample represented fresh water from the distribution main that had been flowing from the sample tap for five minutes before being sampled.

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was calculated by dividing the volume of water between the two sampling points by the sample day flow. For example, if it was determined that the retention time within the plant was five hours then there would be a five hour interval between the raw and treated sampling. Similarly if it was estimated that it took approximately one day for the water to travel from the plant to the distribution system site, this site would be sampled one day after the treated water from the plant.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in a uniform manner.

Sample day flow, treatment chemical dosages and Field Chemistry measurements were recorded on the day of sampling and were entered on the DWSP database as submitted.

RESULTS

Water at the Oshawa Water Treatment Plant and at two sites in the dsitribution system was sampled on a monthly basis and analysed for approximately 160 parameters in 1988. The Specific Pesticides and Chlorophenols scans were sampled in June and November only. Polynuclear Aromatic Hydrocarbons and Phenolics were only analysed in the raw and treated water at the plant. As a result of an unforeseen emergency the laboratory capacity was exceeded and analysis for volatiles could not be carried out when the samples were received. Since analysis for volatiles is no longer valid after four weeks of storage, volatile results for February are not available.

Table 3 contains information on the sample day retention time,flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analysed by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analysed in the DWSP.

Associated guidelines and detection limits are also supplied on both tables. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters, these are currently under review. When an ODWO is not available guidelines/limits from other agencies are consulted. The Parameters Listing System (PALIS) recently published (ISBN 0-7729-4461-X) by the MOE catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Although some of the parameters measured on DWSP may be present in the raw and treated water as a result of pollution, many of the compounds detected are naturally occuring or are treatment by-products.

Plant operational personnel address occurrences of taste and odour or

biological water quality parameters. The DWSP does not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable values, as defined by established MOE Laboratory analytical reporting protocols. While they can be useful in trend analysis or confirmation of the presence of a specific contaminant that is repeatedly detected at these levels, the occasional finding of a trace level of a contaminant is not considered to be significant. **DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.**

Bacteriology

Positive results for the Bacteriology scan were present thirteen times in the treated water, ten times in the Site 1 water and nine times in the Site 2 water. The positive parameters were Standard Plate Count, Total Coliform and/or Total Coliform Background and Presence/Absence test.

Coliforms were detected in the November treated water sample at 1/100mL and in the December distribution system site 1 water at 1/100mL. The District Officer was notified.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality; the routine monitoring program usually requires the taking of multiple samples in a given system. Full interpretation of bacteriological quality cannot be made on the

basis of single samples. Further, bacteriological limits were developed in acknowledgement that the presence of coliforms may be detected due to their non-uniform distribution throughout the distribution system and the fact that their enumeration is subject to considerable variation. For these reasons, the occasional finding of low numbers of coliform organisms is not unexpected. Routine bacteriological monitoring, as outlined in the ODWOs is carried out by the operating authority.

Inorganic and Physical Parameters

Laboratory and Field Chemistry

The results for Laboratory and Field Chemistry scans were below any applicable health related ODWOs .

The Turbidity value for the January treated water sample of 1.40 Formazin Turbidity Units (FTU) exceeded the ODWO of 1.0 FTU. The corresponding Field Turbidity value of 0.34 FTU did not support the Lab Turbidity result and in comparison with other Turbidity values appears to be the more reliable value. The District Officer was notified.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier Index. The Langelier Index for Oshawa is consistently positive.

It is desirable that the Temperature of drinking water be less than 15°C; the palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of the delivered water may increase in the distribution system due to the warming effect of the soil in late summer and fall and/or as a result of higher temperatures in the source water. The desired ODWO was exceeded four times in the free flow distributed water.

As part of the treatment process hydrofluosilicic acid is added to the treated water (Table 3). Where fluoridation is practiced, the fluoride concentration recommended in the ODWO is 1.2 mg/L, plus or minus 0.2 mg/L. This level was not maintained in the distribution system as indicated by the Fluoride levels which were below 1.0 mg/L on several occasions. Hydrofluosilicic acid was not added at the time of sampling in February as can be seen from the fluoride results in Table 5.

Metals

The results reported for the Metal scan were below any applicable health related ODWOs.

Elevated levels of Copper, Nickel, Lead and Zinc were detected in the standing samples from the distribution system sites as compared to the free flow samples thus, indicating that these metals were leached from the household plumbing as the water stood overnight. Although the Langelier Index indicates minimal potential for corrosion some metals will be leached

in standing samples in most supplies.

At present, there is no evidence that Aluminum is physiologically harmful and no health limit for drinking water has been specified. The measure of residual Aluminum in the treated water is important to indicate the efficiency of the treatment process. The ODWOs indicate that a useful guideline is to maintain a residual below 100 ug/L as Al in the water leaving the plant to avoid problems in the distribution system. Aluminum values exceeded the ODWO operational guideline six times in the treated and distributed water.

Organic Parameters

Chloroaromatics

Results of the Chloroaromatics scan showed that one parameter was detected:

Pentachlorobenzene

Pentachlorobenzene was detected at a trace level, once in the Site 2 water.

Chlorophenols

Results of the Chlorophenol scan showed that no Chlorophenols were detected.

Pesticides and PCB (Polychlorinated Biphenyl)

Results of the Pesticides and PCB scan showed that no PCBs were detected and that two pesticides were detected:

Alpha BHC

Lindane

There are several isomers of BHC (Benzene Hexachloride); gamma BHC is the active ingredient of the pesticide Lindane, while alpha BHC is the isomer predominantly found in surface waters of the Great Lakes basin.

Alpha BHC was detected at trace levels, eight times in the raw water, eight times in the treated water, eight times in the Site 1 water, and seven times in the Site 2 water.

Lindane was detected at trace levels, twice in the treated water, three times in the Site 1 water and twice in the Site 2 water.

Specific Pesticides

Results of the Specific Pesticides scan show that none were detected.

Phenolics

The maximum desirable concentration of phenolic substances in drinking water is 2.0 ug/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours, particularly in chlorinated water. Phenolics were detected in the raw water ranging from 1.2 ug/L to 1.6 ug/L and in the treated water from 1.0 ug/L to 1.4 ug/L. Phenols were detected at trace levels, seven times in the raw water and eight times in the treated water. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Polynuclear Aromatic Hydrocarbons (PAH)

Results of the PAH scan showed that no PAHs were detected.

Volatiles

Results of the Volatile scan showed that nine parameters, other than Trihalomethanes(THMs), were detected:

- Benzene
- Toluene
- Ethylbenzene
- Meta and Para-Xylene
- Ortho-Xylene
- Styrene
- 1,1,1-Trichloroethane
- Tetrachloroethylene
- Carbon Tetrachloride

Benzene was detected at a trace level, once in a raw water sample.

Toluene was detected at trace levels, once in the raw water, three times in the treated water and once in both distribution system site waters. The detection of toluene at low, trace levels is a laboratory artifact derived from the analytical methodology. The purge-and-trap analytical technique depends on the purging of the volatile organics in the water sample with helium gas onto a Tenax trapping column. The volatile materials are subsequently thermally desorbed, separated and quantified. Tenax, a toluene-like polymeric material, tends to decompose sporadically upon heating into

toluene and other aromatic componenets (ethylbenzene and xylene) giving instrument blanks in the order of 0.05 ug/L.

The detected trace levels of Styrene are also considered to be laboratory artifacts due to the outgassing of monomeric styrene from the polystyrene shipping containers. The sporadic background levels from this source are in the order of 0.05 ug/L.

Ethylbenzene was detected at trace levels, once in the raw water, three times in the treated water, three times in the Site 1 water and twice in the Site 2 water.

Meta and Para-Xylene are analysed as one compound and are reported as Meta-Xylene. It was detected at trace levels, once in the raw water and once in the Site 1 water.

Ortho-Xylene (O-Xylene) was detected at trace levels, once in both distribution system waters.

These volatiles are typically found on an occasional basis at other water supplies included on the DWSP usually at trace levels.

1,1,1-Trichloroethane was detected at 2.32 ug/L in the October raw water sample and 0.26 ug/L in the May Site 1 water. Both occurrences are well below the Environmental Protection Agencies' (EPA) Maximum Contaminant Level (MCL) of 200 ug/L.

Tetrachloroethylene was detected at a trace level in the Site 2 water.

Carbon Tetrachloride was detected at trace levels, once in the treated water and once in the Site 2 water.

THMs are known to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Chlorodibromomethane, Dichlorobromomethane and Total THMs were detected in all treated waters. Bromoform was detected at trace levels in all but one of the treated waters. All Total THM occurences, ranging from 23.8 ug/L - 47.3 ug/L were well below the ODWO of 350 ug/L.

The July raw water sample for volatiles contained high levels of Trihalomethanes indicating that in fact it was probably a treated water sample.

CONCLUSIONS

The Oshawa Water Treatment Plant for the sample year of 1988 produced good quality water at the plant and this was maintained in the distribution system.

No health related guidelines, for organic or inorganic parameters, were exceeded during 1987 or 1988.

RECOMMENDATIONS

Two recommendations can be made:

1) The reason for elevated Aluminum levels in treated water samples should be investigated.

2) Fluoridation practises should be adjusted to maintain the recommended level of fluoride in distributed water.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS SAMPLE DAY CONDITIONS FOR 1988

SAMPLE DAY CONDITIONS			TREATMENT CHEMICAL DOSAGES (MG/L)			
			PRE-CHLORINATION	COAGULATION	FLUORIDATION	POST-CHLORINATION
DATE	RETENTION TIME(HRS)	FLOW (1000 M3)	CHLORINE	ALUM LIQUID	HYDROFLUOSILICIC ACID	CHLORINE
JAN 13	3.5	69.9	01.39	07.55	01.51	00.16
FEB 10	3.5	59.6	01.45	09.61	.	00.11
MAR 16	3.5	62.9	01.32	14.60	01.20	00.16
APR 13	3.5	71.5	01.26	11.60	01.14	00.13
MAY 11	3.5	74.1	01.20	14.10	01.07	00.13
JUN 08	3.5	78.5	01.26	11.60	01.01	00.17
JUL 13	3.5	81.2	01.20	11.60	01.14	00.18
AUG 10	3.5	65.2	01.51	12.60	01.14	00.24
SEP 14	3.5	65.5	01.26	07.05	01.14	00.15
OCT 11	.	.	01.70	12.10	01.07	01.57
NOV 16	3.0	60.5	01.26	13.10	01.07	00.24
DEC 07	3.5	50.1	02.40	12.60	01.20	00.25

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	AERONONAS SP	.	.	.	1	0	0	.	.	.	.	.	.
	E. COLI P/A	.	.	.	1	0	0	.	.	.	.	.	.
	FECAL COLIFORM MF	12	9	0	.	.	.	.	.	.	.	.	.
	FECAL COLIFORM	.	.	.	1	0	0	.	.	.	.	.	.
	STANDRD PLATE CNT MF	6	6	0	11	5	0	9	4	0	10	5	0
	P/A BOTTLE	.	.	.	8	1	0	6	0	0	6	0	0
	STAPH AUREUS	.	.	.	1	0	0	.	.	.	.	.	.
	COLIFORM	.	.	.	1	0	0	.	.	.	.	.	.
	TOTAL COLIFORM MF	12	12	0	12	1	0	10	1	0	10	0	0
	T COLIFORM BCKGRD MF	12	12	0	12	3	0	10	4	0	10	1	0
*TOTAL SCAN BACTERIOLOGICAL		42	39	0	48	10	0	35	9	0	36	6	0
*TOTAL GROUP BACTERIOLOGICAL		42	39	0	48	10	0	35	9	0	36	6	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	12	12	0	20	20	0	20	20	0
	FLD CHLORINE FREE	.	.	.	12	12	0	20	20	0	15	15	0
	FLD CHLORINE (TOTAL)	.	.	.	12	12	0	20	20	0	20	20	0
	FLD PH	12	12	0	12	12	0	20	20	0	20	20	0
	FLD TEMPERATURE	12	12	0	12	12	0	20	20	0	20	20	0
	FLD TURBIDITY	12	12	0	12	12	0	20	20	0	20	20	0
*TOTAL SCAN CHEMISTRY (FLD)		36	36	0	72	72	0	120	120	0	115	115	0
CHEMISTRY (LAB)	ALKALINITY	12	12	0	12	12	0	20	20	0	20	20	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
CHEMISTRY (LAB)	CALCIUM	12	12	0	12	12	0	20	20	0	20	20	0
	CYANIDE	12	0	0	12	0	0	10	0	0	10	0	0
	CHLORIDE	12	12	0	12	12	0	20	20	0	20	20	0
	COLOUR	12	5	7	12	0	10	20	17	3	20	0	19
	CONDUCTIVITY	12	12	0	12	12	0	20	20	0	20	20	0
	FLUORIDE	12	12	0	12	12	0	20	20	0	20	20	0
	HARDNESS	12	12	0	12	12	0	20	20	0	20	20	0
	IONCAL	12	6	0	12	6	0	20	10	0	20	10	0
	LANGELIERS INDEX	12	12	0	12	12	0	20	20	0	20	20	0
	MAGNESIUM	12	12	0	12	12	0	20	20	0	20	20	0
	SODIUM	12	12	0	12	12	0	20	20	0	20	20	0
	AMMONIUM TOTAL	12	10	1	12	7	3	20	14	5	20	15	3
	NITRITE	12	11	1	12	2	10	20	4	15	20	4	14
	TOTAL NITRATES	12	12	0	12	12	0	20	20	0	20	20	0
	NITROGEN TOT KJELD	12	12	0	12	12	0	20	20	0	20	20	0
	PH	12	12	0	12	12	0	20	20	0	20	20	0
	PHOSPHORUS FIL REACT	12	4	7	12	3	6	.	.	.	.	.	.
	PHOSPHORUS TOTAL	12	9	3	12	1	9	.	.	.	.	.	.
	SULPHATE	6	6	0	6	6	0	10	10	0	10	10	0
	TURBIDITY	12	12	0	12	10	2	20	20	0	20	14	5
*TOTAL SCAN CHEMISTRY (LAB)		246	207	19	246	179	40	360	315	23	360	293	41
METALS	SILVER	12	0	3	12	0	7	20	2	8	20	0	8

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
METALS	ALUMINUM	12	12	0	12	12	0	20	20	0	20	20	0
	ARSENIC	12	2	9	12	5	7	20	3	17	20	5	15
	BARIUM	12	12	0	12	12	0	20	20	0	20	20	0
	BORON	12	12	0	12	12	0	20	20	0	20	20	0
	BERYLLIUM	12	0	9	12	0	9	20	0	15	20	0	11
	CADMIUN	12	0	2	12	0	2	20	0	3	20	0	2
	COBALT	12	0	11	12	0	11	20	0	20	20	0	19
	CHROMIUM	12	6	6	12	4	8	20	5	15	20	6	14
	COPPER	12	12	0	12	12	0	20	20	0	20	20	0
	IRON	12	6	6	12	0	7	20	20	0	20	0	7
	MERCURY	11	1	5	11	3	4	9	3	4	9	3	2
	MANGANESE	12	12	0	12	11	1	20	20	0	20	17	3
	MOLYBDENUM	12	12	0	12	12	0	20	20	0	20	20	0
	NICKEL	12	3	9	12	2	9	20	12	7	20	14	6
	LEAD	12	6	6	12	2	8	20	18	2	20	20	0
	ANTIMONY	12	11	1	12	12	0	20	20	0	20	20	0
	SELENIUM	12	0	10	12	0	11	20	0	19	20	0	20
	STRONTIUM	12	12	0	12	12	0	20	20	0	20	20	0
	TITANIUM	12	11	1	12	11	1	20	18	2	20	18	2
	THALLIUM	12	0	3	12	0	4	20	0	6	20	0	7
	URANIUM	12	12	0	12	12	0	20	20	0	20	20	0
	VANADIUM	12	1	11	12	5	7	20	3	17	20	7	13
	ZINC	12	11	1	12	12	0	20	20	0	20	20	0
*TOTAL SCAN METALS		287	154	93	287	151	96	469	284	135	469	270	129
*TOTAL GROUP INORGANIC & PHYSICAL		569	397	112	605	402	136	949	719	158	944	678	170

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
CHLOROAROMATICS	HEXACHLOROBUTADIENE	11	0	0	12	0	0	10	0	0	10	0	0
	123 TRICHLOROBENZENE	11	0	0	12	0	0	10	0	0	10	0	0
	1234 T-CHLOROBENZENE	11	0	0	12	0	0	10	0	0	10	0	0
	1235 T-CHLOROBENZENE	11	0	0	12	0	0	10	0	0	10	0	0
	124 TRICHLOROBENZENE	11	0	0	12	0	0	10	0	0	10	0	0
	1245 T-CHLOROBENZENE	11	0	0	12	0	0	10	0	0	10	0	0
	135 TRICHLOROBENZENE	11	0	0	12	0	0	10	0	0	10	0	0
	HCB	11	0	0	12	0	0	10	0	0	10	0	0
	HEXACHLOROETHANE	11	0	0	12	0	0	10	0	0	10	0	0
	OCTACHLOROSTYRENE	11	0	0	12	0	0	10	0	0	10	0	0
	PENTACHLOROBENZENE	11	0	0	12	0	0	10	0	0	10	0	0
	236 TRICHLOROTOLUENE	11	0	0	12	0	0	10	0	0	10	0	1
	245 TRICHLOROTOLUENE	11	0	0	12	0	0	10	0	0	10	0	0
	26A TRICHLOROTOLUENE	11	0	0	12	0	0	10	0	0	10	0	0
*TOTAL SCAN CHLOROAROMATICS		154	0	0	168	0	0	140	0	0	140	0	1
CHLOROPHENOLS	234 TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	2345 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	2356 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	245-TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	246-TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	PENTACHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
*TOTAL SCAN CHLOROPHENOLS		12	0	0	12	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
PAH	PHENANTHRENE	12	0	0	12	0	0	.	.	.	.	.	.
	ANTHRACENE	12	0	0	12	0	0	.	.	.	.	.	.
	FLUORANTHENE	12	0	0	12	0	0	.	.	.	.	.	.
	PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(A)ANTHRACENE	12	0	0	12	0	0	.	.	.	.	.	.
	CHRYSENE	12	0	0	12	0	0	.	.	.	.	.	.
	DIMETH. BENZ(A)ANTHR	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(E) PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(J) FLUORANTHEN	0	0	0	0	0	0	.	.	.	.	.	.
	BENZO(B) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.	.	.
	PERYLENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(K) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(A) PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(G,H,I) PERYLEN	12	0	0	12	0	0	.	.	.	.	.	.
	DIBENZO(A,H) ANTHRAC	12	0	0	12	0	0	.	.	.	.	.	.
	INDENO(1,2,3-C,D) PY	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(B) CHRYSENE	12	0	0	12	0	0	.	.	.	.	.	.
	ANTHANTHRENE	0	0	0	0	0	0	.	.	.	.	.	.
	CORONENE	12	0	0	12	0	0	.	.	.	.	.	.
*TOTAL SCAN PAH		204	0	0	204	0	0	0	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	11	0	0	12	0	0	10	0	0	10	0	0
	ALPHA BHC	11	0	8	12	0	8	10	0	8	10	0	7

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE	RAW		TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	BETA BHC	11	0	0	12	0	0	10	0	0	10	0	0
	LINDANE	11	0	0	12	0	2	10	0	3	10	0	2
	ALPHA CHLORDANE	11	0	0	12	0	0	10	0	0	10	0	0
	GAMMA CHLORDANE	11	0	0	12	0	0	10	0	0	10	0	0
	DIELDRIN	11	0	0	12	0	0	10	0	0	10	0	0
	METHOXYCHLOR	11	0	0	12	0	0	10	0	0	10	0	0
	ENDOSULFAN I	11	0	0	12	0	0	10	0	0	10	0	0
	ENDOSULFAN II	11	0	0	12	0	0	10	0	0	10	0	0
	ENDRIN	11	0	0	12	0	0	10	0	0	10	0	0
	ENDOSULFAN SULPHATE	11	0	0	12	0	0	10	0	0	10	0	0
	HEPTACHLOR EPOXIDE	11	0	0	12	0	0	10	0	0	10	0	0
	HEPTACHLOR	11	0	0	12	0	0	10	0	0	10	0	0
	MIREX	11	0	0	12	0	0	10	0	0	10	0	0
	OXYCHLORDANE	11	0	0	12	0	0	10	0	0	10	0	0
	OPDDT	11	0	0	12	0	0	10	0	0	10	0	0
	PCB	11	0	0	12	0	0	10	0	0	10	0	0
	DDD	11	0	0	12	0	0	10	0	0	10	0	0
	PPDDE	11	0	0	12	0	0	10	0	0	10	0	0
	PPDDT	11	0	0	12	0	0	10	0	0	10	0	0
	AMETRINE	12	0	0	12	0	0	10	0	0	10	0	0
	ATRAZINE	12	0	0	12	0	0	10	0	0	10	0	0
	ATRATONE	12	0	0	12	0	0	10	0	0	10	0	0
	CYANAZINE	12	0	0	12	0	0	10	0	0	10	0	0
	DES ETHYL ATRAZINE	6	0	0	6	0	0	5	0	0	5	0	0
	DES ETHYL SIMAZINE	6	0	0	6	0	0	5	0	0	5	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
PESTICIDES & PCB	PROMETONE	12	0	0	12	0	0	10	0	0	10	0	0
	PROPAZINE	12	0	0	12	0	0	10	0	0	10	0	0
	PROMETRYNE	12	0	0	12	0	0	10	0	0	10	0	0
	METRIBUZIN	12	0	0	12	0	0	10	0	0	10	0	0
	SIMAZINE	12	0	0	12	0	0	10	0	0	10	0	0
	ALACHLOR	12	0	0	12	0	0	10	0	0	10	0	0
	METOLACHLOR	12	0	0	12	0	0	10	0	0	10	0	0
*TOTAL SCAN PESTICIDES & PCB		375	0	8	396	0	10	330	0	11	330	0	9
PHENOLICS	PHENOLICS	12	3	7	12	2	8	.	.	.	.	.	.
*TOTAL SCAN PHENOLICS		12	3	7	12	2	8	0	0	0	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	0	0	0	0	0	0	0	0	0	0	0	0
	2,4,5-T	2	0	0	2	0	0	.	.	.	.	.	.
	2,4-D	2	0	0	2	0	0	.	.	.	.	.	.
	24DCHLRPHENOXYBUTYRC	2	0	0	2	0	0	.	.	.	.	.	.
	2,4 D PROPIONIC ACID	2	0	0	2	0	0	.	.	.	.	.	.
	DICAMBA	2	0	0	2	0	0	.	.	.	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.	.	.	.
	SILVEX	2	0	0	2	0	0	.	.	.	.	.	.
	DIAZINON	2	0	0	2	0	0	.	.	.	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
SPECIFIC PESTICIDES	DICHLOROVOS	2	0	0	2	0	0	.	.	.	.	.	.
	CHLORPYRIFOS	2	0	0	2	0	0	.	.	.	.	.	.
	ETHION	2	0	0	2	0	0	.	.	.	.	.	.
	AZINPHOS-METHYL	0	0	0	0	0	0	.	.	.	.	.	.
	MALATHION	2	0	0	2	0	0	.	.	.	.	.	.
	MEVINPHOS	2	0	0	2	0	0	.	.	.	.	.	.
	METHYL PARATHION	2	0	0	2	0	0	.	.	.	.	.	.
	METHYLTRITHION	2	0	0	2	0	0	.	.	.	.	.	.
	PARATHION	2	0	0	2	0	0	.	.	.	.	.	.
	PHORATE	2	0	0	2	0	0	.	.	.	.	.	.
	RELDAN	2	0	0	2	0	0	.	.	.	.	.	.
	RONNEL	2	0	0	2	0	0	.	.	.	.	.	.
	AMINOCARB	0	0	0	0	0	0	.	.	.	.	.	.
	BENOMYL	2	0	0	2	0	0	.	.	.	.	.	.
	BUX	2	0	0	2	0	0	.	.	.	.	.	.
	CARBOFURAN	2	0	0	2	0	0	.	.	.	.	.	.
	CICP	2	0	0	2	0	0	.	.	.	.	.	.
	DIALLATE	2	0	0	2	0	0	.	.	.	.	.	.
	EPTAM	2	0	0	2	0	0	.	.	.	.	.	.
	IPC	2	0	0	2	0	0	.	.	.	.	.	.
	PROPOXUR	2	0	0	2	0	0	.	.	.	.	.	.
	CARBARYL	2	0	0	2	0	0	.	.	.	.	.	.
	BUTYLATE	2	0	0	2	0	0	.	.	.	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		56	0	0	56	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
VOLATILES	BENZENE	11	0	1	11	0	0	9	0	0	9	0	0
	TOLUENE	11	0	1	11	0	3	9	0	1	9	0	1
	ETHYLBENZENE	11	0	1	11	0	3	9	0	3	9	0	2
	P-XYLENE	11	0	0	11	0	0	9	0	0	9	0	0
	M-XYLENE	11	0	1	11	0	0	9	0	1	9	0	0
	O-XYLENE	11	0	0	11	0	0	9	0	1	9	0	1
	STYRENE	3	0	1	3	0	0	3	0	2	3	0	1
	1,1 DICHLOROETHYLENE	11	0	0	11	0	0	9	0	0	9	0	0
	METHYLENE CHLORIDE	11	0	0	11	0	0	9	0	0	9	0	0
	T1,2DICHLOROETHYLENE	11	0	0	11	0	0	9	0	0	9	0	0
	1,1 DICHLOROETHANE	11	0	0	11	0	0	9	0	0	9	0	0
	CHLOROFORM	11	1	2	11	11	0	9	9	0	9	9	0
	111, TRICHLOROETHANE	11	1	0	11	0	0	9	1	0	9	0	0
	1,2 DICHLOROETHANE	11	0	0	11	0	0	9	0	0	9	0	0
	CARBON TETRACHLORIDE	11	0	0	11	0	1	9	0	0	9	0	1
	1,2 DICHLOROPROPANE	11	0	0	11	0	0	9	0	0	9	0	0
	TRICHLOROETHYLENE	11	0	0	11	0	0	9	0	0	9	0	0
	DICHLOROBROMOMETHANE	11	1	0	11	11	0	9	9	0	9	9	0
	112 TRICHLOROETHANE	11	0	0	11	0	0	9	0	0	9	0	0
	CHLORODIBROMOMETHANE	11	1	0	11	11	0	9	9	0	9	9	0
	T-CHLOROETHYLENE	11	0	0	11	0	0	9	0	0	9	0	1
	BROMOFORM	11	0	1	11	0	10	9	0	9	9	0	9
	1122 T-CHLOROETHANE	11	0	0	11	0	0	9	0	0	9	0	0
	CHLOROBENZENE	11	0	0	11	0	0	9	0	0	9	0	0
	1,4 DICHLOROBENZENE	11	0	0	11	0	0	9	0	0	9	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE	RAW		TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	1,3 DICHLOROBENZENE	11	0	0	11	0	0	9	0	0	9	0	0
	1,2 DICHLOROBENZENE	11	0	0	11	0	0	9	0	0	9	0	0
	TRIFLUOROCHLOROTOLUE	5	0	0	5	0	0	4	0	0	4	0	0
	ETHLYENE DIBROMIDE	11	0	0	11	0	0	9	0	0	9	0	0
	TOTL TRIHALOMETHANES	11	1	0	11	11	0	9	9	0	9	9	0
*TOTAL SCAN VOLATILES		316	5	8	316	44	17	259	37	17	259	36	16
*TOTAL GROUP ORGANIC		1129	8	23	1164	46	35	729	37	28	729	36	26
TOTAL		1740	444	135	1817	458	171	1713	765	186	1709	720	196

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours
2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, the AO is a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. However, studies of long-term environmental trends and modelling may be adversely affected by exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported qualified by the code "<T". Results quantified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. However the average of such data is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!LA	No Data: Laboratory Accident

!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UAL	Unreliable: Sample Age Exceeds Normal Limit
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
BACTERIOLOGICAL						
AEROMONAS SP (0=ABSENT)			**DET'N LIMIT = N/A**		**GUIDELINE = 0 (A1)**	
FEB	.	0	.	.	.	.
E. COLI P/A (0=ABSENT)			**DET'N LIMIT = N/A**		**GUIDELINE = N/A**	
FEB	.	0	.	.	.	.
FECAL COLIFORM MF (CT/100ML)			**DET'N LIMIT = 0**		**GUIDELINE = 0 (A1)**	
JAN	73	.	.	.	.	.
FEB	91	.	.	.	.	.
MAR	1	.	.	.	.	.
APR	3	.	.	.	.	.
MAY	0	.	.	.	.	.
JUN	0	.	.	.	.	.
JUL	0	.	.	.	.	.
AUG	6	.	.	.	.	.
SEP	35 T24	.	.	.	.	.
OCT	6 T48	.	.	.	.	.
NOV	150 >	.	.	.	.	.
DEC	20 T48	.	.	.	.	.
FECAL COLIFORM (0=ABSENT)			**DET'N LIMIT = N/A**		**GUIDELINE = 0 (A1)**	
FEB	.	0	.	.	.	.
STANDRD PLATE CNT MF (CT/ML)			**DET'N LIMIT = 0**		**GUIDELINE = 500/ML (A1)**	
JAN	480	13	.	0	.	1
FEB	TOP	1	.	0	.	0
MAR	760	4	.	5	.	6
APR	IAW	IAW	.	IAW	.	.
MAY	93	0	.	1	.	2
JUN	148	0	.	.	.	1
JUL	1800	15	.	.	.	1
AUG	900	10	.	0	.	.
SEP	.	2 <=>	.	0 <=>	.	3 <=>
OCT	.	1 <=>	.	20 T24	.	6 <=>
NOV	.	3 <=>	.	2 <=>	.	8 <=>
DEC	.	6 <=>	.	29 T24	.	0 <=>
P/A BOTTLE (0=ABSENT)			**DET'N LIMIT = 0**		**GUIDELINE = 0 (A1*)**	
JAN	.	0	.	0	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.	1	.	0	.	0
MAR	.	0	.	0	.	0
APR	.	0	.	0	.	.
MAY	.	0	.	0	.	0
JUN	.	0	.	.	.	0
JUL	.	0	.	.	.	0
AUG	.	0	.	0	.	.
STAPH AUREUS (0=ABSENT)			DET'N LIMIT = N/A		GUIDELINE = 0 (A1)	
FEB	.	0	.	.	.	.
COLIFORM (0=ABSENT)			DET'N LIMIT = N/A		GUIDELINE = 0 (A1)	
FEB	.	0	.	.	.	.
TOTAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 5/100ML(A1)	
JAN	2900	0	.	0	.	0
FEB	2500	0	.	0	.	0
MAR	212 A3C	0	.	0	.	0
APR	174 A3C	0	.	0	.	.
MAY	18 A3C	0	.	0	.	0
JUN	18	0	.	.	.	0
JUL	86 A3C	0	.	.	.	0
AUG	100 A3C	0	.	0	.	.
SEP	540 A3C	0 T24	.	0 T24	.	0 T24
OCT	40 A3C	0 T48	.	0 T24	.	0 T24
NOV	3000 >	1 T24	.	0 T06	.	0 T06
DEC	1020 A3C	0 T48	.	1 T24	.	0 T24
T COLIFORM BCKGRD MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = N/A	
JAN	3300	0	.	0	.	0
FEB	5700	0	.	1	.	0
MAR	2040	0	.	0	.	0
APR	1100	0	.	0	.	.
MAY	600	0	.	1	.	0
JUN	520	0	.	.	.	0
JUL	1440	0	.	.	.	0
AUG	6000	0	.	0	.	.
SEP	18000 A3C	5 T24	.	1 T24	.	1 T24
OCT	2200 A3C	0 T48	.	0 T24	.	0 T24
NOV	48000 >	1 T24	.	1 T06	.	0 T06
DEC	22000 A3C	2 T48	.	0 T24	.	0 T24

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (FLD)						
FLD CHLORINE (COMB) (MG/L)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.	.200	.100	.100	.200	.200
FEB	.	.200	.100	.200	.200	.300
MAR	.	.200	.100	.100	.300	.300
APR	.	.200	.100	.100	.	.
MAY	.	.400	.100	.100	.400	.200
JUN	.	.200	.	.	.300	.100
JUL	.	.200	.	.	.300	.200
AUG	.	.200	.100	.100	.	.
SEP	.	.200	.100	.100	.200	.200
OCT	.	.200	.100	.100	.200	.100
NOV	.	.200	.100	.100	.200	.200
DEC	.	.200	.100	.100	.300	.200
FLD CHLORINE FREE (MG/L)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.	.700	.100	.100	.300	.500
FEB	.	.700	.100	.100	.300	.400
MAR	.	.700	.100	.100	.	.400
APR	.	.700	.100	.100	.	.
MAY	.	.700	.100	.100	.	.400
JUN	.	.500	.	.	.	.400
JUL	.	.700	.	.	.100	.300
AUG	.	.900	.100	.100	.	.
SEP	.	.700	.100	.100	.100	.400
OCT	.	.900	.100	.100	.	.400
NOV	.	.700	.100	.100	.100	.300
DEC	.	.700	.100	.100	.	.300
FLD CHLORINE (TOTAL) (MG/L)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.	.900	.200	.200	.500	.700
FEB	.	.900	.200	.300	.500	.700
MAR	.	.900	.200	.200	.300	.700
APR	.	.900	.200	.200	.	.
MAY	.	1.100	.200	.200	.400	.600
JUN	.	.700	.	.	.300	.500
JUL	.	.900	.	.	.400	.500
AUG	.	1.100	.200	.200	.	.
SEP	.	.900	.200	.200	.300	.600
OCT	.	1.100	.200	.200	.200	.500
NOV	.	.900	.200	.200	.300	.500
DEC	.	.900	.200	.200	.300	.500

TABLE 5

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	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
FLD PH (DMSNLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	7.800	7.400	7.500	7.500	7.400	7.400
FEB	7.800	7.400	7.600	7.500	7.400	7.400
MAR	7.800	7.400	7.500	7.450	7.400	7.300
APR	7.800	7.400	7.500	7.500	.	.
MAY	7.900	7.600	7.600	7.600	7.600	7.500
JUN	8.000	7.600	.	.	7.400	7.500
JUL	8.000	7.600	.	.	7.500	7.450
AUG	7.800	7.500	7.600	7.550	.	.
SEP	7.800	7.600	7.600	7.600	7.500	7.500
OCT	8.000	7.700	7.500	7.600	7.400	7.500
NOV	7.800	7.600	7.550	7.600	7.500	7.500
DEC	7.800	7.400	7.700	7.650	7.500	7.500
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A		GUIDELINE = 15 (A1)	
JAN	3.500	4.000	18.800	6.700	7.500	8.000
FEB	1.000	3.000	20.200	5.900	16.500	6.000
MAR	2.000	3.500	19.700	4.800	17.000	5.500
APR	5.000	6.000	17.900	7.800	.	.
MAY	8.000	9.000	18.400	9.400	16.500	9.500
JUN	6.500	8.000	.	.	17.500	11.000
JUL	12.000	11.000	.	.	20.000	14.000
AUG	12.500	13.000	24.800	18.600	.	.
SEP	9.000	9.500	20.700	17.500	20.000	14.500
OCT	13.000	13.500	17.700	16.000	19.000	15.500
NOV	5.500	6.000	20.100	12.000	17.500	10.000
DEC	5.500	5.000	20.300	11.000	17.000	8.500
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A		GUIDELINE = 1.0 (A1)	
JAN	8.300	.340	.230	.220	.090	.100
FEB	2.000	.450	.240	.260	.200	.100
MAR	1.000	.380	.330	.260	.170	.180
APR	1.950	.250	.230	.310	.	.
MAY	1.010	.110	.190	.200	.060	.060
JUN	1.250	.120	.	.	.130	.110
JUL	1.150	.380	.	.	.200	.260
AUG	2.000	.350	.400	.420	.	.
SEP	1.200	.420	.450	.440	.230	.170
OCT	8.900	.320	.560	.560	.290	.220
NOV	6.800	.480	.510	.470	.410	.360
DEC	4.000	.120	.370	.420	.100	.080

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (LAB)						
ALKALINITY (MG/L)			DET'N LIMIT = .200		GUIDELINE = 30-500 (A4)	
JAN	104.100	96.200	95.200	95.100	95.200	95.200
FEB	103.700	97.500	95.400	96.500	95.700	96.100
MAR	102.400	95.300	95.400	95.700	96.200	95.800
APR	101.800	109.200	120.600	119.300	.	.
MAY	104.600	96.200	97.300	97.300	97.800	97.700
JUN	102.000	95.900	.	.	96.200	97.300
JUL	93.700	90.800	.	.	90.900	93.700
AUG	104.400	95.500	99.900	99.600	.	.
SEP	104.500	99.500	99.200	100.700	99.000	99.300
OCT	98.000	93.600	93.800	93.500	94.400	95.100
NOV	105.100	99.100	98.400	98.300	99.800	99.400
DEC	103.700	97.800	100.000	101.400	97.600	97.900
CALCIUM (MG/L)			DET'N LIMIT = .100		GUIDELINE = 100 (F2)	
JAN	42.000	41.400	40.600	41.400	41.200	42.000
FEB	41.600	41.400	41.200	40.600	41.000	40.600
MAR	39.400	40.200	38.800	39.600	40.000	39.400
APR	39.800	41.200	40.400	41.800	.	.
MAY	40.600	40.600	39.800	39.800	39.200	39.000
JUN	38.400	38.900	.	.	39.200	40.100
JUL	42.800	41.800	.	.	41.600	41.400
AUG	39.600	40.400	39.200	39.800	.	.
SEP	41.000	41.000	42.000	42.200	41.000	41.000
OCT	40.200	39.200	41.000	40.500	39.700	42.000
NOV	43.400	43.200	43.400	43.200	46.800	43.000
DEC	38.800	38.200	38.400	37.400	37.400	41.000
CHLORIDE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 250 (A3)	
JAN	24.900	26.400	26.200	26.200	26.000	25.700
FEB	25.900	27.400	27.000	26.000	27.500	27.300
MAR	28.000	29.200	29.300	29.200	29.100	29.500
APR	24.600	25.900	26.100	25.900	.	.
MAY	23.900	24.900	25.200	24.900	25.000	25.100
JUN	23.500	24.300	.	.	24.700	24.200
JUL	22.600	23.700	.	.	23.900	23.700
AUG	22.900	23.500	24.400	23.500	.	.
SEP	21.900	23.100	23.000	22.900	23.300	23.000
OCT	21.800	23.300	23.400	23.200	23.400	22.400
NOV	24.600	25.700	24.800	25.000	26.200	25.700
DEC	24.500	26.700	24.400	24.700	26.700	26.600

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	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
COLOUR (TCU)		DET'N LIMIT = .5		GUIDELINE = 5.0 (A3)		
JAN	2.500	1.500 <T	2.500	2.500	1.000 <T	.500 <T
FEB	2.000 <T	BDL	2.500	2.000 <T	.500 <T	.500 <T
MAR	3.000	.500 <T	2.500	3.000	.500 <T	.500 <T
APR	1.500 <T	BDL	1.500 <T	2.000 <T	.	.
MAY	1.500 <T	.500 <T	2.500	2.500	1.000 <T	1.000 <T
JUN	2.500	1.500 <T	.	.	2.000 <T	1.500 <T
JUL	2.000 <T	1.000 <T	.	.	1.000 <T	.500 <T
AUG	2.500	1.000 <T	3.500	2.500	.	.
SEP	2.000 <T	1.000 <T	3.000	3.000	.500 <T	BDL
OCT	2.500	1.000 <T	3.000	4.000	1.000 <T	1.000 <T
NOV	2.000 <T	1.000 <T	3.500	3.000	1.000 <T	.500 <T
DEC	2.000 <T	.500 <T	3.000	3.000	.500 <T	.500 <T
CONDUCTIVITY (UMHO/CM)		DET'N LIMIT = 1		GUIDELINE = 400 (F2)		
JAN	338	335	343	340	344	340
FEB	339	357	342	337	348	347
MAR	344	351	350	351	353	352
APR	333	332	340	331	.	.
MAY	337	337	340	340	342	341
JUN	330	335	.	.	338	338
JUL	332	336	.	.	340	336
AUG	332	332	333	332	.	.
SEP	327	333	329	334	331	330
OCT	322	327	327	324	331	331
NOV	341	345	336	336	347	343
DEC	340	351	338	342	348	348
FLUORIDE (MG/L)		DET'N LIMIT = .01		GUIDELINE = 2.400 (A1)		
JAN	.100	1.080	1.100	1.040	1.060	1.040
FEB	.140	.120	.220	.180	.160	.140
MAR	.140	1.020	1.080	1.040	1.050	1.010
APR	.100	1.100	1.100	1.070	.	.
MAY	.130	1.100	1.080	1.060	1.100	1.090
JUN	.130	1.140	.	.	1.140	1.120
JUL	.120	1.130	.	.	1.150	1.140
AUG	.120	1.200	.700	.690	.	.
SEP	.120	.860	.760	.740	.860	.860
OCT	.140	1.180	1.180	1.120	1.160	1.180
NOV	.140	1.120	1.120	1.000	1.060	1.040
DEC	.140	1.060	.780	.740	1.100	1.080
HARDNESS (MG/L)		DET'N LIMIT = .500		GUIDELINE = 80-100 (A4)		

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	140.000	140.000	136.000	138.000	139.000	140.000
FEB	139.000	139.000	138.000	136.000	137.000	136.000
MAR	134.000	136.000	132.000	132.000	135.000	134.000
APR	134.000	137.000	132.000	139.000	.	.
MAY	137.000	136.000	135.000	134.000	131.000	132.000
JUN	128.000	131.000	.	.	131.000	133.000
JUL	142.000	140.000	.	.	140.000	139.000
AUG	134.000	136.000	133.000	134.000	.	.
SEP	136.000	139.000	141.000	139.000	134.000	136.000
OCT	135.500	134.000	138.500	137.000	134.000	141.000
NOV	143.000	143.000	143.000	143.000	152.000	143.000
DEC	134.000	132.000	132.000	129.000	130.000	139.000
IONCAL (DIMENSIONLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.000 MAF	.000 MAF	.000 MAF	.000 MAF	.000 MAF	.000 MAF
FEB	.000 MAF	.000 MAF	.000 MAF	.000 MAF	.000 MAF	.000 MAF
MAR	.000 MAF	.000 MAF	.000 MAF	.000 MAF	.000 MAF	.000 MAF
APR	.000 MAF	.000 MAF	.000 MAF	.000 MAF	.	.
MAY	.000 MAF	.000 MAF	.000 MAF	.000 MAF	.000 MAF	.000 MAF
JUN	.000 MAF	.000 MAF	.	.	.000 MAF	.000 MAF
JUL	8.521	6.436	.	.	5.291	3.646
AUG	3.872	.763	2.980	1.961	.	.
SEP	2.199	1.952	3.768	1.314	1.148	.504
OCT	2.160	1.450	3.949	2.706	.431	5.122
NOV	.036	1.926	3.808	2.775	6.030	3.106
DEC	5.991	7.516	7.794	8.987	9.080	3.616
LANGELIERS INDEX (DIMENSIONLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.346 MAF	.215 MAF	.082 MAF	.130 MAF	.188 MAF	.127 MAF
FEB	.410 MAF	.179 MAF	.209 MAF	.228 MAF	.208 MAF	.185 MAF
MAR	.460 MAF	.157 MAF	.182 MAF	.202 MAF	.229 MAF	.220 MAF
APR	.443 MAF	.329 MAF	.352 MAF	.453 MAF	.	.
MAY	.573 MAF	.307 MAF	.343 MAF	.333 MAF	.338 MAF	.346 MAF
JUN	.509 MAF	.417 MAF	.	.	.381 MAF	.416 MAF
JUL	.429	.224	.	.	.322	.234
AUG	.412	.242	.318	.294	.	.
SEP	.478	.296	.456	.424	.404	.375
OCT	.492	.361	.401	.455	.379	.367
NOV	.474	.216	.266	.283	.353	.245
DEC	.439	.296	.399	.443	.346	.408
MAGNESIUM (MG/L)			DET'N LIMIT = .050		GUIDELINE = 30 (F2)	
JAN	8.700	8.700	8.400	8.500	8.700	8.600

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	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	8.600	8.500	8.500	8.300	8.300	8.300
MAR	8.600	8.600	8.500	8.200	8.500	8.600
APR	8.300	8.300	7.600	8.500	.	.
MAY	8.600	8.400	8.500	8.500	8.100	8.500
JUN	7.700	8.100	.	.	7.950	8.100
JUL	8.600	8.700	.	.	8.700	8.700
AUG	8.500	8.600	8.600	8.400	.	.
SEP	8.200	8.900	8.800	8.100	7.700	8.200
OCT	8.600	8.800	8.800	8.700	8.500	8.800
NOV	8.400	8.600	8.400	8.600	8.500	8.600
DEC	9.100	9.000	8.600	8.600	8.900	8.900
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)	
JAN	13.200	13.400	13.200	13.000	13.200	13.200
FEB	14.000	14.200	13.400	13.400	13.800	13.600
MAR	15.400	15.400	15.200	15.400	15.200	15.400
APR	12.000	12.400	12.000	12.400	.	.
MAY	12.800	12.800	13.000	12.800	12.000	12.800
JUN	11.700	12.100	.	.	12.100	12.100
JUL	12.200	12.200	.	.	12.200	12.200
AUG	11.800	11.800	11.800	11.800	.	.
SEP	11.800	12.000	12.400	12.200	12.200	12.200
OCT	12.100	12.100	11.900	11.800	11.700	11.700
NOV	13.200	13.000	12.400	12.200	13.000	12.800
DEC	13.800	13.800	13.000	13.400	14.000	14.000
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)	
JAN	.006 <T	.012	.184	.008 <T	.310	.010
FEB	BDL	.004 <T	.024	.006 <T	.070	.020
MAR	.018	.032	.044	.036	.036	.010
APR	.034	.012	.040	.010	.	.
MAY	.024	.008 <T	.064	.006 <T	.032	.006 <T
JUN	.024	.010	.	.	.204	.008 <T
JUL	.050	.002 <T	.	.	.316	.006 <T
AUG	.052	.024	.112	.022	.	.
SEP	.020	BDL	.002 <T	.002 <T	.020	BDL
OCT	.012	.004	.040	.004	.146	.004
NOV	.072	BDL	.052	BDL	.150	BDL
DEC	.092	.016	.042	.010	.052	.010
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)	
JAN	.036	.001 <T	.001 <T	BDL	.002 <T	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.073	.001 <T	.002 <T	.001 <T	.002 <T	.001 <T
MAR	.069	.016	.012	.020	.006	.005
APR	.011	.001 <T	.001 <T	.001 <T	.	.
MAY	.005	.003 <T	.003 <T	.003 <T	.003 <T	.003 <T
J	.003 <T	.001 <T	.	.	.002 <T	BDL
JUL	.005	.001 <T	.	.	.002 <T	.002 <T
AUG	.029	.003 <T	.003 <T	.004 <T	.	.
SEP	.005	.001 <T	.002 <T	.002 <T	.002 <T	.001 <T
OCT	.012	.007	.009	.009	.009	.005
NOV	.046	.003 <T	.004 <T	.001 <T	.002 <T	.001 <T
DEC	.062	.003 <T	.003 <T	.003 <T	.003 <T	.003 <T
TOTAL NITRATES (MG/L)			DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)	
JAN	.500	.450	.570	.445	.840	.430
FEB	.485	.425	.475	.430	.590	.475
MAR	.505	.435	.475	.455	.515	.435
APR	.360	.365	.405	.365	.	.
MAY	.350	.345	.395	.345	.410	.350
JUN	.330	.340	.	.	.590	.345
JUL	.290	.295	.	.	.715	.290
AUG	.305	.280	.405	.300	.	.
SEP	.395	.385	.390	.390	.455	.390
OCT	.225	.245	.270	.215	.420	.295
NOV	.495	.465	.500	.420	.650	.465
DEC	.515	.475	.505	.410	.530	.445
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT = .020		GUIDELINE = N/A	
JAN	.260	.200	.280	.160	.500	.170
FEB	.320	.150	.180	.150	.250	.180
MAR	.260	.180	.220	.180	.250	.200
APR	.260	.170	.240	.100	.	.
MAY	.160	.160	.230	.160	.210	.160
JUN	.270	.140	.	.	.390	.170
JUL	.280	.180	.	.	.680	.200
AUG	.240	.200	.320	.220	.	.
SEP	.190	.160	.170	.160	.210	.150
OCT	.250	.190	.200	.160	.330	.190
NOV	.240	.170	.220	.150	.350	.170
DEC	.390	.180	.230	.150	.260	.190
PH (DIMSNLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	8.150	8.060	7.940	7.980	8.040	7.970

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	8.220	8.020	8.060	8.080	8.060	8.020
MAR	8.300	8.020	8.060	8.070	8.090	8.090
APR	8.280	8.120	8.110	8.200	.	.
MAY	8.390	8.160	8.200	8.190	8.200	8.210
JUN	8.360	8.290	.	.	8.250	8.270
JUL	8.270	8.090	.	.	8.190	8.090
AUG	8.240	8.100	8.170	8.140	.	.
SEP	8.290	8.130	8.280	8.240	8.240	8.210
OCT	8.340	8.240	8.260	8.320	8.250	8.210
NOV	8.260	8.030	8.080	8.100	8.130	8.060
DEC	8.280	8.170	8.260	8.310	8.230	8.250
PHOSPHORUS FIL REACT (MG/L)			DET'N LIMIT = .0005		GUIDELINE = N/A	
JAN	.006	.008	.	.	.	.
FEB	.003	BDL	.	.	.	.
MAR	.001 <T	.001 <T	.	.	.	.
APR	.001 <T	.001 <T	.	.	.	.
MAY	.000 <T	.000 <T	.	.	.	.
JUN	.000 <T	.001 <T	.	.	.	.
JUL	.003	.000 <T	.	.	.	.
AUG	.002 <T	BDL	.	.	.	.
SEP	BDL	BDL	.	.	.	.
OCT	.001 <T	.003	.	.	.	.
NOV	.005	.003	.	.	.	.
DEC	.002 <T	.001 <T	.	.	.	.
PHOSPHORUS TOTAL (MG/L)			DET'N LIMIT = .002		GUIDELINE = .40 (F2)	
JAN	.033	.018	.	.	.	.
FEB	.016	BDL	.	.	.	.
MAR	.015	.003 <T	.	.	.	.
APR	.012	.004 <T	.	.	.	.
MAY	.005 <T	.003 <T	.	.	.	.
JUN	.014	.005 <T	.	.	.	.
JUL	.015	.007 <T	.	.	.	.
AUG	.005 <T	BDL	.	.	.	.
SEP	.006 <T	.006 <T	.	.	.	.
OCT	.026	.008 <T	.	.	.	.
NOV	.032	.007 <T	.	.	.	.
DEC	.019	.004 <T	.	.	.	.
SULPHATE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 500. (A3)	
JUL	27.860	30.060	.	.	30.440	30.430

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	26.920	29.860	27.140	27.800	.	.
SEP	27.400	27.300	27.700	27.500	27.800	27.500
OCT	27.900	29.500	29.300	30.000	29.200	29.400
NOV	29.000	30.000	27.500	28.900	30.000	26.990
DEC	33.000	36.000	34.500	33.000	36.500	37.000
TURBIDITY (FTU)			DET'N LIMIT = .02		GUIDELINE = 1.00 (A1)	
JAN	3.500	1.400	.200	.150	BDL	.030 <T
FEB	2.500	.150	.260	.220	.110	.080 <T
MAR	3.700	.250	.380	.370	.180	.160
APR	1.050	.100	.200	.230	.	.
MAY	.960	.080 <T	.200	.200	.070 <T	.090 <T
JUN	1.010	.210	.	.	.150	.150
JUL	.680	.800	.	.	.300	.360
AUG	1.000	.320	.430	.400	.	.
SEP	1.230	.560	.540	.680	.620	.500
OCT	1.700	.340	.420	.440	.350	.350
NOV	5.000	.490	.450	.490	.470	.300
DEC	3.900	.180 <T	.600	.700	.380	.200 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
METALS						
SILVER (UG/L)			DET'N LIMIT = .020		GUIDELINE = 50. (A1)	
JAN	BDL	.020 <T	.080 <T	BDL	.020 <T	.060 <T
FEB	.020 <T	.020 <T	.200 <T	.020 <T	.020 <T	.020 <T
MAR	.020 <T	.100 <T	2.300	.070 <T	.060 <T	.050 <T
APR	BDL	.040 <T	1.200	.030 <T	.	.
MAY	BDL	BDL	.270 <T	BDL	BDL	BDL
JUN	BDL	.030 <T	.	.	BDL	BDL
JUL	.120 <T	.060 <T	.	.	.060 <T	.030 <T
AUG	BDL	BDL	BDL	BDL	.	.
SEP	BDL	BDL	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	.030 <T	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	BDL	.030 <T	.030 <T	BDL	BDL	BDL
ALUMINUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100.(A4)	
JAN	100.000	120.000	41.000	32.000	38.000	37.000
FEB	43.000	35.000	50.000	45.000	38.000	41.000
MAR	48.000	80.000	61.000	59.000	60.000	66.000
APR	10.000	68.000	68.000	63.000	.	.
MAY	4.200	190.000	72.000	60.000	65.000	66.000
JUN	11.000	65.000	.	.	69.000	60.000
JUL	9.500	120.000	.	.	110.000	110.000
AUG	7.700	64.000	67.000	60.000	.	.
SEP	9.500	67.000	80.000	70.000	74.000	57.000
OCT	58.000	100.000	100.000	110.000	95.000	80.000
NOV	73.000	90.000	74.000	66.000	76.000	81.000
DEC	46.000	49.000	71.000	60.000	48.000	48.000
ARSENIC (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50.0 (A1)	
JAN	BDL	1.000	.740 <T	.630 <T	.770 <T	.750 <T
FEB	.940 <T	.450 <T	.560 <T	.500 <T	.500 <T	.400 <T
MAR	.800 <T	.600 <T	.570 <T	.560 <T	.630 <T	.600 <T
APR	.820 <T	.690 <T	.710 <T	.710 <T	.	.
MAY	.720 <T	.810 <T	.620 <T	.600 <T	.630 <T	.610 <T
JUN	.690 <T	1.400	.	.	.930 <T	.830 <T
JUL	.900 <T	.850 <T	.	.	.890 <T	.770 <T
AUG	1.200	1.200	.860 <T	1.100	.	.
SEP	1.000 <T	1.300	.980 <T	.830 <T	.960 <T	1.100
OCT	1.300	1.400	1.200	1.500	1.500	1.700
NOV	.990 <T	.940 <T	.720 <T	.880 <T	1.100	1.100
DEC	.880 <T	.710 <T	.830 <T	.500 <T	.690 <T	.490 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
BARIUM (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000. (A1)	
JAN	23.000	22.000	23.000	21.000	21.000	21.000
FEB	24.000	22.000	24.000	21.000	22.000	22.000
MAR	21.000	23.000	25.000	22.000	23.000	22.000
APR	23.000	21.000	24.000	20.000	.	.
MAY	22.000	21.000	24.000	22.000	22.000	21.000
JUN	23.000	22.000	.	.	23.000	22.000
JUL	24.000	25.000	.	.	23.000	23.000
AUG	24.000	25.000	25.000	24.000	.	.
SEP	24.000	24.000	24.000	23.000	23.000	23.000
OCT	25.000	25.000	25.000	24.000	24.000	24.000
NOV	25.000	24.000	25.000	23.000	24.000	23.000
DEC	25.000	24.000	25.000	24.000	26.000	24.000
BORON (UG/L)			DET'N LIMIT = 0.200		GUIDELINE = 5000. (A1)	
JAN	27.000	26.000	28.000	26.000	28.000	27.000
FEB	25.000	24.000	26.000	24.000	26.000	26.000
MAR	23.000	27.000	41.000	25.000	36.000	26.000
APR	24.000	23.000	23.000	23.000	.	.
MAY	21.000	21.000	27.000	21.000	22.000	21.000
JUN	30.000	25.000	.	.	59.000	22.000
JUL	24.000	26.000	.	.	35.000	23.000
AUG	25.000	64.000	27.000	28.000	.	.
SEP	56.000	51.000	63.000	27.000	38.000	27.000
OCT	43.000	43.000	37.000	42.000	44.000	44.000
NOV	91.000	74.000	30.000	48.000	29.000	38.000
DEC	58.000	29.000	61.000	28.000	48.000	33.000
BERYLLIUM (UG/L)			DET'N LIMIT = 0.010		GUIDELINE = .20 (H)	
JAN	.010 <T	BDL	.010 <T	.010 <T	.010 <T	.010 <T
FEB	.020 <T	BDL	BDL	BDL	BDL	BDL
MAR	.010 <T	.010 <T	.020 <T	.010 <T	.020 <T	BDL
APR	.050 <T	.040 <T	.080 <T	.020 <T	.	.
MAY	BDL	BDL	.020 <T	BDL	BDL	BDL
JUN	BDL	.060 <T	.	.	BDL	BDL
JUL	.060 <T	.020 <T	.	.	.020 <T	BDL
AUG	BDL	.060 <T	BDL	.020 <T	.	.
SEP	.100 <T	.030 <T	.030 <T	.100 <T	BDL	.030 <T
OCT	.030 <T	.060 <T	.100 <T	.050 <T	.050 <T	.030 <T
NOV	.130 <T	.130 <T	.040 <T	.100 <T	.070 <T	.100 <T
DEC	.050 <T	.040 <T	.080 <T	BDL	.040 <T	.040 <T
CADMIUM (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 5.000 (A1)	

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DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	.060 <T	.050 <T	.060 <T	BDL	BDL	.050 <T
FEB	BDL	BDL	BDL	BDL	BDL	BDL
MAR	.050 <T	BDL	BDL	BDL	BDL	BDL
APR	BDL	BDL	.060 <T	BDL	.	.
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	BDL	.080 <T	.	.	.110 <T	BDL
JUL	BDL	BDL	.	.	BDL	BDL
AUG	BDL	BDL	BDL	BDL	.	.
SEP	BDL	BDL	BDL	BDL	BDL	BDL
OCT	BDL	BDL	.090 <T	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	BDL	BDL	BDL	BDL	BDL	BDL
COBALT (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000 (H)	
JAN	.450 <T	.330 <T	.350 <T	.310 <T	.360 <T	.320 <T
FEB	.070 <T	.060 <T	.060 <T	.070 <T	.090 <T	.060 <T
MAR	.150 <T	.110 <T	.130 <T	.140 <T	.140 <T	.110 <T
APR	.070 <T	.030 <T	.080 <T	.070 <T	.	.
MAY	.060 <T	.040 <T	.030 <T	.040 <T	.060 <T	.050 <T
JUN	.070 <T	.090 <T	.	.	.130 <T	.090 <T
JUL	BDL	BDL	.	.	.040 <T	BDL
AUG	.110 <T	.030 <T	.080 <T	.080 <T	.	.
SEP	.130 <T	.140 <T	.110 <T	.070 <T	.080 <T	.100 <T
OCT	.230 <T	.090 <T	.170 <T	.160 <T	.160 <T	.140 <T
NOV	.140 <T	.070 <T	.070 <T	.090 <T	.060 <T	.060 <T
DEC	.160 <T	.160 <T	.140 <T	.150 <T	.150 <T	.120 <T
CHROMIUM (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (A1)	
JAN	.960 <T	.650 <T	.540 <T	.500 <T	.600 <T	.660 <T
FEB	.560 <T	.530 <T	.490 <T	.470 <T	.480 <T	.480 <T
MAR	.560 <T	.570 <T	.560 <T	.560 <T	.630 <T	.650 <T
APR	1.100	.750 <T	.630 <T	.670 <T	.	.
MAY	.750 <T	.620 <T	.510 <T	.590 <T	.610 <T	.720 <T
JUN	1.100	1.000 <T	.	.	.590 <T	.610 <T
JUL	.260 <T	.330 <T	.	.	.390 <T	.390 <T
AUG	.700 <T	2.900	.610 <T	.460 <T	.	.
SEP	7.200	6.600	8.100	.860 <T	1.200	.980 <T
OCT	6.100	5.800	4.100	5.800	5.500	6.300
NOV	6.700	5.100	.670 <T	2.500	.540 <T	1.600
DEC	5.800	.590 <T	5.600	.640 <T	2.700	1.300
COPPER (UG/L)			DET'N LIMIT = .100		GUIDELINE = 1000 (A3)	
JAN	2.700	4.000	37.000	4.000	24.000	5.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	1.500	2.300	33.000	3.600	34.000	4.600
MAR	1.400	2.200	41.000	3.900	33.000	4.100
APR	1.200	2.100	29.000	3.700	.	.
MAY	1.300	4.900	25.000	3.700	32.000	4.200
JUN	1.200	1.600	.	.	31.000	5.400
JUL	1.200	2.200	.	.	36.000	7.200
AUG	1.400	3.300	33.000	5.900	.	.
SEP	1.200	2.100	33.000	5.700	31.000	4.700
OCT	1.600	3.500	37.000	5.900	30.000	5.400
NOV	2.100	2.500	35.000	5.200	29.000	5.900
DEC	2.600	2.700	38.000	5.000	33.000	5.900
IRON (UG/L)		DET'N LIMIT = 4.000		GUIDELINE = 300. (A3)		
JAN	190.000	7.100 <T	80.000	89.000	BDL	BDL
FEB	58.000	BDL	79.000	85.000	BDL	BDL
MAR	57.000	7.300 <T	79.000	93.000	6.800 <T	8.000 <T
APR	27.000 <T	6.900 <T	76.000	94.000	.	.
MAY	9.200 <T	18.000 <T	85.000	83.000	BDL	BDL
JUN	28.000 <T	5.700 <T	.	.	15.000 <T	18.000 <T
JUL	12.000 <T	BDL	.	.	BDL	BDL
AUG	7.400 <T	BDL	110.000	97.000	.	.
SEP	8.400 <T	9.600 <T	150.000	130.000	8.400 <T	BDL
OCT	100.000	BDL	130.000	170.000	BDL	BDL
NOV	93.000	13.000 <T	150.000	130.000	11.000 <T	15.000 <T
DEC	78.000	BDL	140.000	130.000	BDL	BDL
MERCURY (UG/L)		DET'N LIMIT = 0.010		GUIDELINE = 1.000 (A1)		
JAN	.020	.010	.	.010	.	.050
FEB	BDL	BDL	.	.710	.	.030
MAR	BDL	.700	.	BDL	.	.030
APR	BDL	BDL	.	.010	.	.
MAY	ISS	ISS	.	ISS	.	ISS
JUN	BDL	BDL	.	.	.	BDL
JUL	.050 <T	.060	.	.	.	.030 <T
AUG	.020 <T	.020 <T	.	.020 <T	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	.020 <T	.020 <T	.	.020 <T	.	BDL
NOV	.020 <T	.020 <T	.	.020 <T	.	BDL
DEC	.020 <T	.020 <T	.	.020 <T	.	.020 <T
MANGANESE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 50.0 (A3)		
JAN	11.000	1.300	7.600	7.600	.570	.530

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	3.600	.530	6.600	5.700	.520	.550
MAR	3.400	.760	7.300	7.000	.860	.670
APR	2.000	.640	6.100	7.800	.	.
MAY	1.100	1.300	6.700	6.300	.450 <T	.400 <T
JUN	1.800	.550	.	.	.640	.480 <T
JUL	2.100	.770	.	.	.650	.610
AUG	2.000	.570	9.200	9.900	.	.
SEP	1.300	.740	12.000	12.000	.640	.550
OCT	8.300	.450 <T	12.000	14.000	.600	.540
NOV	5.300	.950	9.900	11.000	.790	.700
DEC	5.900	.670	11.000	11.000	.650	.590
MOLYBDENUM (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 500 (H)	
JAN	1.100	1.300	1.300	1.200	1.200	1.200
FEB	1.100	1.200	1.200	1.100	1.300	1.200
MAR	1.100	1.300	1.300	1.300	1.300	1.300
APR	1.200	1.000	1.200	1.100	.	.
MAY	1.300	1.100	1.100	1.200	1.200	1.100
JUN	1.100	1.200	.	.	1.200	1.300
JUL	1.200	1.200	.	.	1.200	1.100
AUG	1.200	1.400	1.100	1.200	.	.
SEP	.870	.890	.880	.920	.960	.940
OCT	1.100	1.300	1.200	1.100	1.100	1.300
NOV	1.400	1.500	1.100	1.200	1.400	1.300
DEC	1.300	1.300	1.200	1.100	1.300	1.300
NICKEL (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (F3)	
JAN	6.000	5.200	7.900	5.200	10.000	4.900
FEB	1.300 <T	1.300 <T	3.700	.970 <T	21.000	1.400
MAR	2.000	1.800	5.400	2.100	7.300	1.500
APR	.430 <T	.280 <T	2.600	.320 <T	.	.
MAY	.670 <T	.360 <T	2.900	.740 <T	19.000	1.100 <T
JUN	1.000 <T	1.100 <T	.	.	23.000	.860 <T
JUL	.810 <T	.600 <T	.	.	5.200	.490 <T
AUG	.450 <T	BDL	16.000	BDL	.	.
SEP	1.100 <T	1.100 <T	13.000	.860 <T	5.900	1.000 <T
OCT	1.800 <T	.380 <T	8.000	1.200 <T	12.000	1.300 <T
NOV	1.400 <T	1.100 <T	6.700	.580 <T	6.100	.910 <T
DEC	2.600	1.800 <T	7.000	1.700 <T	6.800	2.700
LEAD (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50. (A1)	
JAN	.860	.120 <T	3.200	.240	1.700	.220

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.210	.040 <T	3.300	.190 <T	2.200	.220
MAR	.240	.120 <T	2.700	.220	2.300	.290
APR	.130 <T	BDL	1.800	.200 <T	.	.
MAY	.140 <T	.210	2.400	.270	2.300	.290
JUN	.100 <T	.100 <T	.	.	2.500	.360
JUL	.130 <T	.040 <T	.	.	3.500	.470
AUG	.100 <T	.110 <T	4.600	.520	.	.
SEP	.060 <T	BDL	2.600	.420	4.000	.370
OCT	.600	.110 <T	2.200	.230	2.700	.370
NOV	.770	.210	2.300	.290	2.400	.430
DEC	.540	.100 <T	2.500	.300	2.300	.400
ANTIMONY (UG/L)		DET'N LIMIT = .050		GUIDELINE = 146. (D4)		
JAN	.290	.260	.310	.250	.280	.270
FEB	.260	.300	.380	.280	.300	.270
MAR	.220	.270	.330	.230	.330	.260
APR	.240	.210	.270	.230	.	.
MAY	.260	.250	.290	.230	.250	.270
JUN	.200 <T	.320	.	.	.340	.320
JUL	.280	.290	.	.	.280	.240
AUG	.630	.600	.780	.770	.	.
SEP	.670	.670	.660	.560	.520	.570
OCT	.470	.630	.580	.560	.580	.650
NOV	.550	.570	.630	.600	.650	.520
DEC	.390	.700	.510	.410	.430	.390
SELENIUM (UG/L)		DET'N LIMIT = 0.200		GUIDELINE = 10. (A1)		
JAN	1.700 <T	1.700 <T	1.900 <T	1.800 <T	2.000 <T	2.900 <T
FEB	1.100 <T	.880 <T	.790 <T	.910 <T	1.100 <T	1.300 <T
MAR	BDL	.440 <T	.750 <T	.850 <T	1.100 <T	.730 <T
APR	.570 <T	.820 <T	1.400 <T	1.200 <T	.	.
MAY	.290 <T	1.100 <T	1.300 <T	.710 <T	1.000 <T	1.000 <T
JUN	.790 <T	.700 <T	.	.	.820 <T	.760 <T
JUL	.410 <T	1.400 <T	.	.	1.000 <T	1.300 <T
AUG	BDL	BDL	BDL	1.200 <T	.	.
SEP	4.500 <T	6.800 <T	6.400 <T	3.200 <T	5.700 <T	3.500 <T
OCT	1.300 <T	4.500 <T	2.700 <T	5.300 <T	6.600 <T	4.000 <T
NOV	1.200 <T	1.100 <T	1.100 <T	2.300 <T	1.400 <T	3.100 <T
DEC	1.100 <T	2.400 <T	2.200 <T	3.600 <T	2.500 <T	3.600 <T
STRONTIUM (UG/L)		DET'N LIMIT = .050		GUIDELINE = 2000.(H)		
JAN	180.000	180.000	180.000	180.000	180.000	180.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	180.000	180.000	180.000	180.000	180.000	180.000
MAR	180.000	200.000	200.000	190.000	190.000	190.000
APR	170.000	170.000	180.000	170.000	.	.
MAY	190.000	180.000	190.000	190.000	200.000	190.000
JUN	180.000	200.000	.	.	190.000	200.000
JUL	190.000	170.000	.	.	180.000	180.000
AUG	170.000	180.000	180.000	180.000	.	.
SEP	190.000	190.000	210.000	200.000	210.000	200.000
OCT	190.000	180.000	190.000	180.000	180.000	190.000
NOV	180.000	180.000	180.000	180.000	180.000	180.000
DEC	180.000	180.000	180.000	180.000	180.000	180.000
TITANIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = N/A	
JAN	8.100	3.100	2.600	2.700	2.600	2.700
FEB	6.800	3.700	4.000	3.900	3.700	4.100
MAR	5.400	3.400	3.400	2.800	3.200	3.100
APR	2.300	2.100	2.300	2.600	.	.
MAY	2.700	3.600	3.200	3.100	3.100	3.100
JUN	4.300	2.700	.	.	4.000	2.500
JUL	2.400	2.500	.	.	2.500	2.300
AUG	9.200	10.000	9.200	10.000	.	.
SEP	1.700 <T	1.100 <T	1.200 <T	.580 <T	.910 <T	.650 <T
OCT	6.400	3.400	2.800	2.900	3.700	3.500
NOV	9.000	5.100	4.000	4.100	4.500	5.100
DEC	5.400	3.000	3.100	3.100	3.200	3.100
THALLIUM (UG/L)			DET'N LIMIT = .010		GUIDELINE = 13. (D4)	
JAN	.020 <T	.030 <T	.010 <T	.020 <T	.010 <T	.020 <T
FEB	BDL	.020 <T	BDL	.010 <T	.020 <T	BDL
MAR	BDL	BDL	BDL	BDL	BDL	BDL
APR	BDL	BDL	.030 <T	.020 <T	.	.
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	BDL	.040 <T	.	.	.040 <T	.030 <T
JUL	BDL	BDL	.	.	BDL	BDL
AUG	BDL	BDL	BDL	BDL	.	.
SEP	BDL	BDL	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	.040 <T	BDL	BDL	BDL	.020 <T	BDL
DEC	.020 <T	.040 <T	.020 <T	BDL	.030 <T	BDL
URANIUM (UG/L)			DET'N LIMIT = .020		GUIDELINE = 20. (A2)	
JAN	.410	.390	.430	.350	.350	.420

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DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.410	.330	.410	.440	.330	.340
MAR	.300	.400	.390	.350	.330	.300
APR	.300	.310	.330	.370	.	.
MAY	.290	.340	.340	.340	.330	.320
JUN	.320	.390	.	.	.420	.370
JUL	.340	.420	.	.	.400	.380
AUG	.330	.370	.260	.390	.	.
SEP	.340	.550	.460	.490	.420	.430
OCT	.320	.360	.310	.300	.350	.300
NOV	.410	.390	.390	.380	.420	.440
DEC	.380	.380	.360	.430	.330	.390
VANADIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100 (X)	
JAN	.720	.610	.530	.480	.580	.570
FEB	.340 <T	.430	.310 <T	.270 <T	.390 <T	.400
MAR	.390 <T	.550	.450	.340 <T	.470	.490
APR	.090 <T	.280 <T	.200 <T	.150 <T	.	.
MAY	.200 <T	.410 <T	.360 <T	.300 <T	.380 <T	.410 <T
JUN	.260 <T	.390 <T	.	.	.390 <T	.370 <T
JUL	.270 <T	.450 <T	.	.	.460 <T	.450 <T
AUG	.250 <T	.540	.320 <T	.390 <T	.	.
SEP	.280 <T	.370 <T	.440 <T	.400 <T	.420 <T	.350 <T
OCT	.450 <T	.370 <T	.300 <T	.300 <T	.400 <T	.400 <T
NOV	.440 <T	.450 <T	.340 <T	.330 <T	.410 <T	.400 <T
DEC	.480 <T	.650	.400 <T	.410 <T	.640	.580
ZINC (UG/L)			DET'N LIMIT = .001		GUIDELINE = 5.00 (A3)	
JAN	4.200	1.900	17.000	2.100	25.000	2.600
FEB	1.700	1.300	12.000	1.500	29.000	1.700
MAR	1.800	1.300	14.000	1.700	20.000	1.600
APR	1.400	1.300	8.500	1.900	.	.
MAY	1.200	1.500	6.800	2.000	23.000	1.900
JUN	.970 <T	1.600	.	.	35.000	2.200
JUL	1.300	1.100	.	.	22.000	1.900
AUG	1.100	1.800	40.000	2.400	.	.
SEP	1.100	1.300	41.000	2.000	17.000	1.700
OCT	2.600	2.000	39.000	2.900	19.000	2.400
NOV	3.700	1.900	26.000	2.300	15.000	2.200
DEC	3.100	2.300	37.000	2.600	20.000	3.000

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DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHLOROALIPHATICS						
PENTACHLOROBENZENE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 74000 (D4)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	6.000 <T
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	TLA	BDL	.	.	.	BDL
JUL	BDL	BDL	.	.	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL

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DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
PESTICIDES & PCB						
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 700 (G)	
JAN	2.000 <T	2.000 <T	.	2.000 <T	.	1.000 <T
FEB	BDL	BDL	.	BDL	.	BDL
MAR	1.000 <T	4.000 <T	.	2.000 <T	.	3.000 <T
APR	2.000 <T	2.000 <T	.	2.000 <T	.	.
MAY	2.000 <T	3.000 <T	.	2.000 <T	.	2.000 <T
JUN	ILA	BDL	.	.	.	BDL
JUL	2.000 <T	2.000 <T	.	.	.	3.000 <T
AUG	2.000 <T	BDL	.	2.000 <T	.	.
SEP	2.000 <T	2.000 <T	.	BDL	.	1.000 <T
OCT	2.000 <T	2.000 <T	.	2.000 <T	.	2.000 <T
NOV	BDL	2.000 <T	.	2.000 <T	.	2.000 <T
DEC	BDL	BDL	.	3.000 <T	.	BDL
LINDANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 4000 (A1)	
JAN	BDL	BDL	.	1.000 <T	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	1.000 <T	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	1.000 <T	.	BDL	.	BDL
JUN	ILA	BDL	.	.	.	BDL
JUL	BDL	BDL	.	.	.	1.000 <T
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	3.000 <T	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	1.000 <T	.	1.000 <T
DEC	BDL	BDL	.	BDL	.	BDL

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DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
PHENOLICS (UG/L)	PHENOLICS		DET'N LIMIT = 0.2		GUIDELINE = 2.00 (A3)	
JAN	1.600	.600 <T	.	.	.	.
FEB	.600 <T	.600 <T	.	.	.	.
MAR	BDL	BDL	.	.	.	.
APR	.200 <T	.200 <T	.	.	.	.
MAY	.200 <T	.200 <T	.	.	.	.
JUN	.800 <T	.600 <T	.	.	.	.
JUL	.600 <T	.200 <T	.	.	.	.
AUG	1.000 <T	.600 <T	.	.	.	.
SEP	BDL	BDL	.	.	.	.
OCT	1.200	1.400	.	.	.	.
NOV	1.200	1.000 <T	.	.	.	.
DEC	.600 <T	1.000	.	.	.	.

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DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
VOLATILES						
BENZENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 5.0 (B1)	
JAN	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	.	.	BDL
AUG	.050 <T	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
TOLUENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 24.0 (B4)	
JAN	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	.	.	BDL
AUG	.050 <T	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	.050 <T	.	BDL	.	.050 <T
NOV	BDL	.050 <T	.	.050 <T	.	BDL
DEC	BDL	.050 <T	.	BDL	.	BDL
ETHYLBENZENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 2.4 (B4)	
JAN	BDL	BDL	.	.100 <T	.	BDL
MAR	BDL	BDL	.	.100 <T	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	.100 <T	.	.	.	.100 <T
JUL	BDL	.050 <T	.	.	.	.050 <T
AUG	.100 <T	BDL	.	.050 <T	.	.
SEP	BDL	.050 <T	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
M-XYLENE (UG/L)			DET'N LIMIT = .100		GUIDELINE = 300 (B4)	
JAN	BDL	BDL	.	BDL	.	BDL

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DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	.	.	BDL
AUG	.200 <T	BDL	.	.100 <T	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
O-XYLENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 300 (B4)		
JAN	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	.050 <T
JUL	BDL	BDL	.	.	.	BDL
AUG	BDL	BDL	.	.050 <T	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
STYRENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 46.5 (D2)		
OCT	BDL	BDL	.	.200 <T	.	BDL
NOV	BDL	BDL	.	.150 <T	.	.050 <T
DEC	.100 <T	BDL	.	BDL	.	BDL
CHLOROFORM (UG/L)		DET'N LIMIT = .100		GUIDELINE = 350 (A1+)		
JAN	BDL	15.600	.	10.300	.	17.800
MAR	BDL	17.300	.	12.600	.	17.100
APR	BDL	19.800	.	15.000	.	.
MAY	BDL	17.500	.	13.900	.	14.600
JUN	BDL	14.700	.	.	.	15.400
JUL	17.400	17.200	.	.	.	20.400
AUG	BDL	21.900	.	13.500	.	.
SEP	.100 <T	16.000	.	10.900	.	17.300
OCT	BDL	19.900	.	13.600	.	18.400
NOV	BDL	15.900	.	10.900	.	14.900
DEC	.100 <T	16.600	.	8.900	.	15.500

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DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW
111, TRICHLOROETHANE (UG/L)		DET'N LIMIT = .020		GUIDELINE = 200 (D1)		
JAN	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	.260	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	.	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	2.320	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
CARBON TETRACHLORIDE (UG/L)		DET'N LIMIT = .200		GUIDELINE = 5.0 (D1)		
JAN	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	.	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	.800 <T	.	BDL	.	.800 <T
DICHLOROBROMOMETHANE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 350 (A1+)		
JAN	BDL	10.700	.	8.800	.	11.300
MAR	BDL	13.000	.	10.400	.	13.000
APR	BDL	13.800	.	9.900	.	.
MAY	BDL	13.400	.	11.300	.	11.400
JUN	BDL	11.950	.	.	.	11.700
JUL	14.350	13.250	.	.	.	14.100
AUG	BDL	16.400	.	11.700	.	.
SEP	BDL	12.500	.	9.200	.	13.200
OCT	BDL	12.600	.	10.150	.	12.900
NOV	BDL	10.700	.	7.800	.	10.750
DEC	BDL	13.000	.	8.300	.	12.600
CHLORODIBROMOMETHANE (UG/L)		DET'N LIMIT = .100		GUIDELINE = 350 (A1+)		
JAN	BDL	6.000	.	4.300	.	6.100
MAR	BDL	8.400	.	5.300	.	6.500

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DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW
APR	BDL	8.100	.	5.200	.	.
MAY	BDL	6.500	.	5.700	.	5.900
JUN	BDL	9.300	.	.	.	6.600
JUL	6.600	5.600	.	.	.	6.200
AUG	BDL	8.400	.	6.800	.	.
SEP	BDL	7.700	.	5.000	.	8.900
OCT	BDL	7.300	.	5.700	.	8.000
NOV	BDL	7.600	.	5.200	.	7.900
DEC	BDL	7.100	.	5.800	.	6.200
T-CHLOROETHYLENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 10.0 (C2)	
JAN	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	.	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	.050 <T
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
BROMOFORM (UG/L)			DET'N LIMIT = .200		GUIDELINE = 350 (A1+)	
JAN	BDL	.400 <T	.	.400 <T	.	.400 <T
MAR	BDL	.400 <T	.	.400 <T	.	.400 <T
APR	BDL	BDL	.	.600 <T	.	.
MAY	BDL	.800 <T	.	.400 <T	.	.600 <T
JUN	BDL	.400 <T	.	.	.	.600 <T
JUL	.600 <T	.400 <T	.	.	.	.400 <T
AUG	BDL	.600 <T	.	.600 <T	.	.
SEP	BDL	.800 <T	.	.600 <T	.	.800 <T
OCT	BDL	.600 <T	.	.600 <T	.	.800 <T
NOV	BDL	.800 <T	.	.600 <T	.	.600 <T
DEC	BDL	.800 <T	.	.600 <T	.	.800 <T
TOTL TRIHALOMETHANES (UG/L)			DET'N LIMIT = .500		GUIDELINE = 350 (A1)	
JAN	BDL	32.700	.	23.800	.	35.600
MAR	BDL	39.100	.	28.700	.	37.000
APR	BDL	41.700	.	30.700	.	.
MAY	BDL	38.200	.	31.300	.	32.500
JUN	BDL	36.350	.	.	.	34.300

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DRINKING WATER SURVEILLANCE PROGRAM OSHAWA WSS 1988

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JUL	38.950	36.450	.	.	.	41.100
AUG	BDL	47.300	.	32.600	.	.
SEP	BDL	37.000	.	25.700	.	40.200
OCT	BDL	40.400	.	30.050	.	40.100
NOV	BDL	35.000	.	24.500	.	34.150
DEC	BDL	38.300	.	23.600	.	35.900

Table VI

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
P/A BOTTLE		0	0 (A1*)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	5000. (B1)
PENTACHLOROPHENOL	NG/L	50.	60000. (B1)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	°C	N/A	<15 °C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)
SODIUM	MG/L	.20	200. (C3)
AMMONIUM TOTAL	MG/L	.002	.05(F2)
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
BERYLLIUM	UG/L	.010	0.20	(H)
CADMIUM	UG/L	.050	5.0	(A1)
COBALT	UG/L	.020	1000.	(H)
CHROMIUM	UG/L	.100	50.	(A1)
COPPER	UG/L	.100	1000.	(A3)
IRON	UG/L	4.0	300.	(A3)
MERCURY	UG/L	.01	1.0	(A1)
MANGANESE	UG/L	.050	50.	(A3)
MOLYBDENUM	UG/L	.020	500.	(H)
NICKEL	UG/L	.100	50.	(F3)
LEAD	UG/L	.050	50.	(A1)
SELENIUM	UG/L	.200	10.	(A1)
SILVER	UG/L	.020	50.	(A1)
STRONTIUM	UG/L	.050	2000.	(H)
THALLIUM	UG/L	.010	13.	(D4)
TITANIUM	UG/L	.050	N/A	
URANIUM	UG/L	.020	20.	(A2)
VANADIUM	UG/L	.050	100.	(H)
ZINC	UG/L	.020	500.	(A3)
PHENOLICS				
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0	(A3)
PESTICIDES & PCB				
ALDRIN	NG/L	1.0	700.	(A1)
AMETRINE	NG/L	50.	300000.	(D3)
ATRAZINE	NG/L	50.	60000.	(B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700.	(G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300.	(G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000.	(A1)
ALPHA CHLORDANE	NG/L	2.0	7000.	(A1)
GAMMA CHLORDANE	NG/L	2.0	7000.	(A1)
DIELDRIN	NG/L	100.	10000.	(B3)
METHOXYCHLOR	NG/L	2.0	700.	(A1)
ENDOSULFAN 1 (THIODAN I)	NG/L	5.0	100000.	(A1)
ENDOSULFAN 2 (THIODAN II)	NG/L	2.0	74000.	(D4)
ENDRIN	NG/L	4.0	74000.	(D4)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	200.	(A1)
HEPTACHLOR EPOXIDE	NG/L	4.0	N/A	
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	1.0	3000.	(A1)
MIREX	NG/L	500.	50000.	(B3)
OXYCHLORDANE	NG/L	5.0	N/A	
O,P-DDT	NG/L	2.0	N/A	
PCB	NG/L	5.0	30000.	(A1)
O,P-DDD	NG/L	20.0	3000.	(A2)
PPDDE	NG/L	5.0	N/A	
PPDDT	NG/L	1.0	30000.	(A1)
ATRATONE	NG/L	5.0	30000.	(A1)
ALACHLOR	NG/L	50.	N/A	
PROMETONE	NG/L	500.	35000.	(D2)
PROPAZINE	NG/L	50.	52500.	(D3)
PROMETRYNE	NG/L	50.	16000.	(D2)
SENCOR (METRIBUZIN)	NG/L	50.	1000.	(B3)
SIMAZINE	NG/L	100.	80000.	(B2)
	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A
BENZO(B)CHRYSENE	NG/L	2.0	N/A
CORONENE	NG/L	10.0	N/A
SPECIFIC PESTICIDES			
TOXAPHENE	NG/L	N/A	5000. (A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	280000. (B1)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000. (A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000. (B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A
DICAMBA	NG/L	100.	87000. (B3)
PICHLORAM	NG/L	100.	2450000. (D3)
SILVEX (2,4,5-TP)	NG/L	50.	10000. (A1)
DIAZINON	NG/L	20.	14000. (A1)
DICHLOROVOS	NG/L	20.	N/A
DURSBAN	NG/L	20.	N/A
ETHION	NG/L	20.	35000. (G)
GUTHION	NG/L	N/A	N/A
MALATHION	NG/L	20.	160000. (G)
MEVINPHOS	NG/L	20.	N/A
METHYL PARATHION	NG/L	50.	7000. (B3)
METHYLTRITHION	NG/L	20.	N/A
PARATHION	NG/L	20.	35000. (B1)
PHORATE (THIMET)	NG/L	20.	35. (D2)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENOMYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	18000. (D3)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	70000. (A1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	50. (G)
METHYLENE CHLORIDE	UG/L	.500	1750. (D3)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	350. (D3)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (D1)
1,2-DICHLOROPROPANE	UG/L	.050	10.0 (G)
TRICHLOROETHYLENE	UG/L	.100	5.0 (D1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	1510. (D3)
1,4-DICHLOROBENZENE	UG/L	.100	5.0 (B1)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	200. (B1)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	46.5 (D2)